

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Malone C. ✓

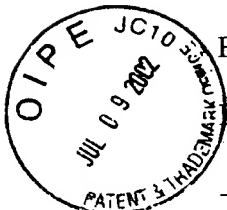
Serial No.: 09/932,529 ✓

Filed: August 17, 2001 ✓

For: DAUGHTER-CARD
STRUCTURAL SUPPORT

Examiner: DINH, T. T. *And*

Art Unit: 2827 *J. McMillan*



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Commissioner of Patents and Trademarks
Washington, DC 20231

AMENDMENTS AND REMARKS

Dear Sir:

In response to the Office Action mailed March 28, 2002, please consider the following remarks and enter the following amendments.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendments. The attachment is captioned "Version with Markings to Show Changes Made."

IN THE SPECIFICATION

Please insert the paragraph below into page 5 of the specification, between the paragraph ending at line 17 and the paragraph beginning at line 18 on page 5.

-- In one embodiment, daughter-card support 202 provides one or more electrical connections 117 for connecting with electrical connection(s)

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115 on motherboard 106. In another embodiment, daughter-card support 202 incorporates a number of holes (exemplified by air flow hole 111) and an air flow channel 113 providing cooling for daughter-card substrate 104, as needed. --

IN THE CLAIMS:

Please enter the following amendments:

Please cancel Claim ~~14~~ without prejudice.

13. (Once Amended) An assembled substrate, comprising:
a motherboard substrate, including one or more electrical components;

one or more daughter-card printed circuit boards, wherein at least one of said daughter-card printed circuit boards includes one or more electrical components; and

a daughter-card support to structurally support said one or more daughter-card printed circuit boards in fixed orientations relative to said motherboard substrate, said daughter-card support supplying structural rigidity to a daughter-card printed circuit board with said daughter-card printed circuit board inserted into said daughter-card support.

19. (Once Amended) The assembled substrate of claim 13, wherein said daughter-card support allows hand replacement of one or more daughter-card printed circuit boards.

REMARKS

Claims 13 and 19 are amended herein. Claim 14 is canceled herein. Claims 13, 15-16 and 19-20 are pending. No new matter is added as a result of the claim amendments.

Restriction Requirement

Applicant elects with traverse, for the reasons previously given, the invention of Group III, recited in Claims 13-16 and 19-20, drawn to an assembled substrate, classified in Class 361, subclass 810.

Drawings

Figure 2 is objected to because it does not show every feature of the invention as specified in the claims. Specifically, the Examiner notes that Figure 2 does not show the one or more electrical connections of Claim 15 or the plurality of air flow channels and holes of Claim 20.

A drawing amendment containing a red-lined Figure 2 showing these features is being separately submitted concurrently with the instant response. No new matter is entered as a result of the drawing changes. The Examiner is respectfully directed to page 4, lines 18-24, of the specification of the present application.

112 Rejections

Claim 20 and presumably Claim 15 are rejected under 35 U.S.C. § 112, first paragraph. Specifically, the Examiner states that the specification is silent with regard to the one or more electrical connections of Claim 15 or the plurality of air flow channels and holes of Claim 20.

The Examiner is respectfully directed to page 4, lines 18-24, of the specification of the present application. Lines 18-20 on page 4 describe the electrical connections of Claim 15 and lines 21-24 on page 4 describe the air flow channels and holes of Claim 20. In addition, page 5 of the instant specification has been amended to include reference to the electrical connections, air flow channels, and air flow holes. Accordingly, Applicant respectfully submits that the rejection of Claim 20 and presumably Claim 15 under 35 U.S.C. § 112, first paragraph, is traversed.

102 Rejections

Claims 13, 15 and 19-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Cheng et al. ("Cheng;" US 5,901,038). The Applicant has reviewed the cited reference and respectfully submits that the present invention as recited in Claims 13, 15 and 19-20 is not anticipated nor rendered obvious by Cheng.

The Examiner is respectfully directed to independent Claim 13, which recites that embodiments of the present invention are directed to "a daughter-card support to structurally support ... daughter-card printed circuit boards ..., said daughter-card support supplying structural rigidity to a daughter-card printed circuit board with said daughter-card printed circuit board inserted into said daughter-card support" (emphasis added). Claims 15 and 19-20 are dependent on Claim 13.

Applicant respectfully submits that Cheng does not pertain to printed circuit boards, specifically daughter-card printed circuit boards, as recited in independent Claim 13. Cheng only describes a mounting structure for a power supply. Applicant respectfully contends that there are significant differences between a power supply and a daughter-card printed circuit

board. Applicant respectfully asserts that Cheng does not show or suggest use of a power supply mounting structure as a daughter-card support. Applicant further asserts that it is not obvious how the power supply of Cheng can be used as a daughter-card support. Clearly, modifications to the power supply mounting structure of Cheng are needed if it is to be used as a daughter-card support. However, Applicant respectfully submits that Cheng lacks any suggestion or description of the modifications needed to use a power supply mounting structure as a daughter-card support.

Furthermore, Applicant respectfully submits that Cheng does not show or suggest a daughter-card printed circuit board inserted into a daughter-card support, as recited in independent Claim 13. Applicant understands that Cheng only shows a power supply essentially resting on a frame.

Moreover, Applicant respectfully submits that Cheng does not show or suggest a daughter-card printed circuit board inserted into a daughter-card support, providing rigidity to the daughter-card, as recited in independent Claim 13. While Cheng discloses a mechanism for locking a power supply onto the frame, this locking mechanism is only applied at a corner of the power supply. Thus, Applicant respectfully contends that the locking mechanism of Cheng specifically, and the power supply mounting structure of Cheng generally, cannot function to provide structural support or rigidity to a component such as a daughter-card printed circuit board.

In summary, Applicant respectfully submits that Cheng does not show or suggest the claimed limitation of "a daughter-card support to structurally support ... daughter-card printed circuit boards ..., said daughter-card support supplying structural rigidity to a daughter-card printed circuit

board with said daughter-card printed circuit board inserted into said daughter-card support" as recited in independent Claim 13. Therefore, Applicant respectfully submits that independent Claim 13 traverses the Examiner's basis for rejection under 35 U.S.C. § 102(b) and is in condition for allowance. Applicant also respectfully submits that Claims 15 and 19-20 traverse the Examiner's basis for rejection under 35 U.S.C. § 102(b) as these claims are dependent on an allowable base claim.

103(a) Rejection

Claim 16 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Cheng. The Applicant has reviewed the cited reference and respectfully submits that the present invention as recited in Claim 16 is not anticipated nor rendered obvious by Cheng.

As discussed above, Applicant respectfully contends that Cheng does not show or suggest the present invention as recited in independent Claim 13, and that Claim 13 is in condition for allowance. Claim 16 is dependent on Claim 13. Therefore, Applicant respectfully submits that Claim 16 traverses the Examiner's basis for rejection under 35 U.S.C. § 103(a) as being dependent on an allowable base claim.

CONCLUSION

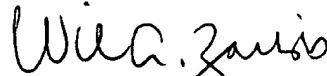
In light of the above remarks, Applicant respectfully requests reconsideration of the rejected Claims.

Based on the arguments presented above, Applicant respectfully asserts that Claims 13, 15-16 and 19-20 overcome the rejections of record and, therefore, Applicant respectfully solicits allowance of these Claims.

The Examiner is invited to contact Applicant's undersigned representative if the Examiner believes such action would expedite resolution of the present Application.

Respectfully submitted,

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